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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,905	10/21/2005	Atsushi Tashiro	31762-224713	1358
26694 7590 02/02/2007 VENABLE LLP P.O. BOX 34385 WASHINGTON, DC 20043-9998			EXAMINER ALBERTALLI, BRIAN LOUIS	
			ART UNIT	PAPER NUMBER
			2626	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/553,905

Applicant(s)

TASHIRO ET AL.

Examiner

Brian L. Albertalli

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration..
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-9,11,12 and 14 is/are rejected.
- 7) ☒ Claim(s) 3,6,10 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, 5, 7-9, 11, 12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kapilow (U.S. Patent 6,952,668, published as PCT Pub. WO00/63882 on 26 October 2000).

In regard to claims 1 and 8, Kapilow discloses compensating circuitry and a compensating method for substituting for erased periodic signal data periodic signal data input before the erased periodic signal data, comprising:

a past data saving circuit/step configured to save a predetermined number of latest periodic signal data input (history buffer 240 stores several periods of speech data, column 6, lines 50-63);

a decision circuit/step configured to determine whether or not an erasure occurs with every periodic signal data sequence, which is a unit of processing (lost frame detector 215 determines whether a frame is erased, column 6, lines 43-49);

a substituting circuit/step configured to use, when an erasure occurs, a periodic signal data sequence lying in a predetermined segment to be used among periodic signal data sequences saved in said past data saving circuit, to generate synthetic data for substitution (an autocorrelation is performed on history buffer 240 to determine a

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pitch estimate column 7, lines 30-54; the pitch estimate is used to generate synthetic speech for substitution, column 9, lines 4-12); and

a position controller/step configured to determine, when the erasure has occurred over a plurality of units of processing, a position of the segment to be used such that the position varies for each of the units of processing (when a second or third frame is erased, several periods of pitch data are stored in the pitch buffer, column 11, lines 1-13; the position of the pitch buffer used varies for the subsequent frames, column 11 line 64 to column 12, line 17 and Fig. 15).

In regard to claims 2 and 9, Kapilow discloses said position controller calculates periods of the periodic signal data sequences saved in said past data saving circuit and selects, among the periods calculated, a waveform period having highest periodicity as a width of the segment to be used (in the pitch estimation step, an autocorrelation is performed on the history buffer 240 to determine the peak of autocorrelation, i.e. the portion with the highest periodicity, column 7, lines 30-54).

In regard to claims 4 and 11, Kapilow discloses said position controller sequentially shifts the position of the segment to be used from a newest periodic signal data sequence toward an oldest periodic signal data sequence saved in said past data saving circuit (Kapilow uses a negative indexing scheme to index the buffers, column 9, lines 16-22; the index used for substitution is shifted towards the oldest periodic signal

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data by shifting the index range from -1 to $-P$ to the older index range $-2P$ to $-P$, column 11, line 60 to column 12, line 6) and

determines, when the segment cannot be further shifted toward the oldest period signal data sequence, the segment at a position adjacent to the oldest periodic signal data sequence (see Fig. 15, the segment is shifted from $1P$ to the adjacent $2P$ pitch buffer, column 11, line 60 to column 12, line 6).

In regard to claims 5 and 12, Kapilow discloses said position controller sequentially shifts the position of the segment to be used from a newest periodic signal data sequence toward an oldest periodic signal data sequence saved in said past data saving circuit, again sequentially shifts, when the segment cannot be further shifted toward the oldest period signal data sequence, the segment from the newest periodic signal data sequence toward the oldest period signal data sequence, and repeats a variation effected by a shift so long as the erasure continues (when a frame is longer than the period, the index is rolled back to the newest saved signal data, column 10, lines 43-53).

In regard to claims 7 and 14, Kapilow discloses the periodic signal comprises a speech signal (column 5, lines 49-51).

Allowable Subject Matter

3. Claims 3, 6, 10, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In regard to claims 3 and 10, Kapilow does not disclose or suggest that a period shorter than a width of a segment to be used (i.e. the waveform segment to be used as a replacement) is used as an index. Kapilow discloses that the index is always shifted by a waveform period. That is, the period is equal to the width of the segment to be used, in order to preserve the phase (see column 12, lines 10-17). Furthermore, the additional prior art of record does not disclose or suggest this feature.

In regard to claims 6 and 13, Kapilow does not disclose that when the segment of the periodic signal data cannot be further shifted toward the oldest period signal data sequence, the segment is shifted toward the newest period data sequence. Kapilow discloses that when the segment cannot be further shifted toward the oldest period signal data sequence, the index is rolled back to the newest signal data, similar to a circular buffer. In contrast, claims 6 and 13 require changing the direction of the shifting (i.e. from shifting towards the oldest data to shifting towards the newest data) when the end of the buffer is reached. Furthermore, the additional prior art of record does not disclose or suggest this feature.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Benyassine et al. (U.S. Patent 6,636,829) disclose a parameter replacement method for handling lost frames. Kroon (U.S. Patent 5,450,449) discloses a method of generating linear prediction coefficients for replacing a lost frame. Shoham (U.S. Patent 5,699,485) disclose a method that repeats a pitch delay for lost frames. Manjunath et al. (U.S. Patent 6,584,438) disclose a method that performs interpolation to smooth discontinuities between a replaced frame and original speech. DeMartin (U.S. Patent 6,775,649) discloses a method that performs interpolation between past a future frames for erasure concealment. McGowan (U.S. Patent 6,584,104) disclose a method that uses frames adjacent to an erasure to conceal the erasure.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. Albertalli whose telephone number is (571) 272-7616. The examiner can normally be reached on Mon - Fri, 8:00 AM - 5:30 PM, every second Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BLA 1/30/07



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